

ASSOCIATION FOR MAXIMUM SERVICE TELEVISION, INC.



VIA ELECTRONIC FILING

February 18, 2010

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Ms. Marlene Dortch  
Secretary  
Federal communications Commission  
445 12th Street, SW  
Washington, DC 20554

Re: Ex Parte Communications  
GN Docket No. 09-47, 09-137  
GN Docket No. 09-51

Dear Ms Dortch:

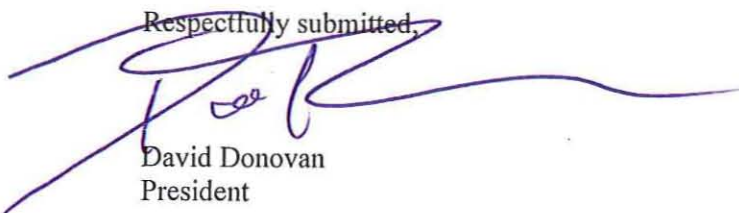
On Wednesday, February 17, 2010, David Donovan, President of the Association for Maximum Service Television (MSTV) along with MSTV's Senior Vice President Victor Tawil and MSTV's Vice President for Policy and Technology Bruce Franca met with Brad Gillen, Legal Advisor for Media Law Issues to Commissioner Meredith Attwell Baker regarding the above referenced matter. During the course of the discussion we addressed two issues relating to the FCC's broadband proceeding.

We discussed the problems associated with the CEA/CTIA proposal regarding the use of single frequency networks. We observed that such a proposal will lead to unacceptable levels of interference and would enhance the ability of the FCC to reclaim spectrum, especially in the larger markets. In addition, implementation of a single frequency network (SFN) would be cost prohibitive.

We also discussed the technical problem with attempting to broadcast two HDTV signals on a single channel. For example, you could not broadcast two high action NFL football games in HDTV on the same channel without losing substantial quality. Indeed the pictures would not properly be considered to be true HDTV pictures. Moreover any bit sharing or multiplexing approach requires the *same station* to be in control of all the bits. Thus, multiplexing and bit sharing does not serve to justify having two separate entities share the same 6 MHz channel.

A copy of our Reply Comments, previously filed in this proceeding, were distributed and are attached hereto.

Respectfully submitted,



David Donovan  
President

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington DC 20554

In the Matter of	)	
	)	
Spectrum for Broadband	)	GN Docket Nos. 09-47, 09-137
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51

**To: The Broadband Task Force**

**REPLY COMMENTS – NBP PUBLIC NOTICE #30**

**THE ASSOCIATION FOR MAXIMUM SERVICE TELEVISION, INC. AND  
THE NATIONAL ASSOCIATION OF BROADCASTERS**

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**THE ASSOCIATION FOR MAXIMUM SERVICE TELEVISION, INC. AND  
THE NATIONAL ASSOCIATION OF BROADCASTERS**

**Introduction and Summary**

The Association for Maximum Service Television, Inc. ("MSTV")<sup>1</sup> and the National Association of Broadcasters ("NAB")<sup>2</sup> submit these reply comments in response to the Commission's *National Broadband Plan Public Notice #30* ("*NBP Notice #30*"). Specifically, MSTV and NAB here address (1) the Joint Comments filed by CTIA and CEA in response to NBP Public Notice #26<sup>3</sup> and (2) the Comments filed by the Department of Justice ("DOJ") and by the National Telecommunications and Information Administration ("NTIA") in the general broadband proceeding.<sup>4</sup>

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<sup>1</sup> MSTV is a nonprofit trade association of local broadcast television stations committed to achieving and maintaining the highest technical quality for the local broadcast system.

<sup>2</sup> NAB is a nonprofit trade association that advocates on behalf of local radio and television stations and also broadcast networks before Congress, the Federal Communications Commission and other federal agencies, and the courts.

<sup>3</sup> See Comments of CTIA – the Wireless Association ("CTIA") and the Consumer Electronics Association ("CEA") on NBP Public Notice #26, Uses of Spectrum (Dec. 22, 2009).

<sup>4</sup> See Submission of the United States Department of Justice (Jan. 4, 2010), and Letter from the NTIA to Chairman Julius Genachowski Regarding the National Broadband Plan, GN Docket No. 09-51 (Jan. 4, 2010).



Recognizing the value of broadband service, the television broadcast industry reiterates its support for the Administration's efforts to increase broadband access. MSTV and NAB have expressly stated that the broadcasting industry will work with the Commission to find the best way to achieve this national goal, particularly the goal of deploying broadband services in underserved rural areas.<sup>5</sup> At the same time, we also recognize that over-the-air television is a service to the public with an enduring and increasingly important and innovative role in the nation's communications landscape. With this reality in mind, we offer comment on CTIA/CEA's proposal to transform the transmission system for television broadcasting and the analysis outlined by the DOJ and NTIA.

In their comments, CTIA/CEA propose to establish a distributed architecture for digital television. We appreciate the proposal proffered by CTIA/CEA and their efforts to be constructive to this proceeding. As noted below, the CTIA/CEA proposal is an important advance because it accepts the value of broadcasting and specifically recognizes the public interest in:

- Protecting consumers' investment in digital televisions;
- Preserving every broadcaster's entire 6 MHz/19.4 Mbps broadcast bitstream; and
- Ensuring that broadcasters would not be required to cover the costs of any transition designed to reallocate spectrum to the wireless industry.

MSTV and NAB agree with these principles. Nonetheless, we cannot endorse this proposal.

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<sup>5</sup> See, e.g., Broadcasting And The Broadband Future: A Proposed Framework For Discussion," GN Docket Nos. 09-47, 09-137, and 09-51 (Dec. 22) ("Framework Document") at 38.

While distributed transmission system (DTS) technology may be used primarily as a fill-in service in certain circumstances, it is not practical or feasible as a sole vehicle for delivering digital television ("DTV") nationwide. Although theoretically attractive, the CTIA/CEA proposal would, in reality, undermine the localized services provided by broadcasters and, as a result, would harm those central to the spectrum debate – American consumers. The proposal would impose significant costs on the public's broadcast service and would cause harmful service losses to viewers as a result of interference and coverage gaps. Moreover, it could not and would not make available significant amounts of contiguous spectrum in the congested areas where the wireless industry claims the greatest spectrum shortfalls.

DOJ and NTIA's submissions in the general broadband docket address the issue of additional spectrum for wireless broadband services. While providing additional insights, it is noteworthy that these submissions were not filed in response to the FCC's Public Notice No. 26, which dealt specifically with broadcast spectrum, and do not support reallocating spectrum now used for local television. Rather, the submissions focus on strategies to increase broadband competition based on the claims of spectrum needs by the wireless telephone industry. They do not address other vital competitive issues, such as the effective and efficient competition that new broadcast mobile video will offer to wireless providers' video services. In formulating a national broadband plan, the FCC must consider these additional issues and take a broader view of the entire communications ecosystem, of which broadcasting and wireless broadband are both valuable and complementary services.

**I. WHILE WELL-INTENTIONED, THE CEA/CTIA PROPOSAL IS INFEASIBLE AND WILL NOT FREE UP SIGNIFICANT SPECTRUM.**

CEA and CTIA properly acknowledge that any Commission proposal that would affect television broadcast spectrum should "(1) allow consumers to continue to enjoy over-the-

air television including broadcast high-definition TV without disturbing consumer television sets; (2) allow television licensees to continue to have the full use of 6 MHz of spectrum and the associated 19.4 Mbps data stream; [and] (3) allow costs of the transition not to be borne by broadcasters.”<sup>6</sup>

CEA/CTIA have offered their DTS proposal “to stimulate discussion.”<sup>7</sup> It is in this spirit that we raise the following concerns. Our initial assessment shows that DTS, while it can be used as a fill-in technology under certain circumstances, cannot, for a host of technical and practical reasons, be adopted as the sole architecture for delivering over-the-air DTV. Use of DTS in this manner would cause the viewing public to suffer significant service losses and would be cost prohibitive. Because of various serious technical complexities that CTIA and CEA have acknowledged, the proposed system is simply impractical. Moreover, implementation of DTS would not fulfill the ultimate goal of the proposal: to free up large contiguous blocks of spectrum for use by other services, particularly in the most heavily populated areas in the country.

**A. Single-Frequency Networks Would Result In Significant Service Losses To The American Public.**

Replacing the current system with DTS would trigger heavy service losses to the American public of two kinds: service losses due to interference and service losses due to coverage gaps.

The 8-VSB modulation method currently used for digital television broadcasting is a single-carrier system that was chosen for its ability to efficiently cover large service areas.

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<sup>6</sup> See CEA/CTIA Comments at 2.

<sup>7</sup> See *id.* at 25.



As CEA/CTIA acknowledge, it “was not designed with an SFN [single frequency network] architecture in mind.”<sup>8</sup> As they indicate, the ATSC has also developed a synchronization standard, ATSC A/110B, for DTS, and as they further state, “[i]t is important to note that every transmitter in an SFN must always transmit completely identical programs and bitstreams.”<sup>9</sup> Otherwise, viewers will receive different DTV signals from both the main TV transmitter and a DTS transmitter, or from multiple DTS transmitters, and as a result will experience interference and loss of service. On paper, a carefully engineered system, with all transmitted signals properly synchronized and with signals from multiple stations being received with the proper amplitude relative to one another, could reduce this interference. But in the real world, signal variations due to radio propagation effects and tower siting problems<sup>10</sup> make such perfection unattainable. The inevitable result of these real-world problems would be that viewers would receive signals with improper amplitude or subject to delays relative to one another -- in both cases causing substantial loss of service to American consumers due to interference.

Wide-scale deployment of DTS for broadcast television is not practically achievable with a single-carrier system such as 8-VSB without causing additional interference. DTS cannot be implemented to “cellularize” DTV nationwide, but may be used primarily as a means to provide “fill-in” service where high-power DTV signals were blocked by terrain or buildings, or other constraints. While DTS may work well to solve limited coverage problems,<sup>11</sup>

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<sup>8</sup> See *id.* at 11.

<sup>9</sup> See *id.* at n.17.

<sup>10</sup> Problems would include zoning limitations, FAA requirements, migratory bird considerations, limited site availability, terrain irregularity, and land cost and availability issues.

<sup>11</sup> Indeed, depending on the terrain, urbanization, real estate costs, zoning and other local factors, a DTS system will not in some circumstances provide an attractive solution even for filling coverage area gaps.



a complete cellularization of entire DTV service areas using 8-VSB is extremely technically challenging and impractical. Signals from different DTS transmitters will reflect off buildings and other obstructions and other propagation factors and will cause signals to lose synchronization and/or be outside the equalizer range of DTV receivers.<sup>12</sup> (Or they may be at varying signal strengths, so that adequate signal-to-noise in the receiver will be unattainable.) And, given that all existing DTV receivers now in the hands of consumers may not function properly in such an environment, many viewers will lose existing service due to interference.<sup>13</sup>

Replication of present over-the-air coverage would require near-perfect siting of every tower in a DTS deployment. For the reasons enumerated above, that is not possible. Coverage gaps are the unavoidable consequence of trying to use a fill-in technology such as DTS as an across-the-board substitute for the existing wide-area service provided by high-power ATSC deployment. Moreover, because of local zoning laws and litigation<sup>14</sup> and thousands of tower siting problems, location compromises inevitably will occur, ultimately resulting in the further sacrifice of existing DTV coverage to the American public.

**B. The Proposal Seriously Underestimates The Transitional And Operational Costs That A DTS Replacement Service Would Impose.**

The costs of implementing DTS for every DTV station nationwide would be orders of magnitude higher than the estimates provided by CTIA/CEA. First, CTIA/CEA's

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<sup>12</sup> Moreover, equalizer range and performance of receivers differs from one receiver manufacturer to another. Performance may also differ based on the different generation of receivers. The DTV receivers in use have varying equalizer ranges and performance, further exacerbating the problem.

<sup>13</sup> CTIA/CEA recognize this problem, stating that "DTS implementation is not without technical impediments that must be considered." *See id.* at 16.

<sup>14</sup> For example, the dispute over a single transmitter site in Denver in connection with the DTV transition took four years to resolve.

estimate that transitioning the country's broadcast service to DTS would cost \$1.37 billion to \$1.83 billion was computed incorrectly. Their transition cost analysis was derived from a calculation that assumed an average deployment of 15 to 20 SFN transmitters per market in all 210 markets, with each transmitter estimated to cost \$435,000. The analysis assumes, however, that one transmitter, encoder and related set of equipment is needed at a SFN tower site. This is incorrect, as it fails to take into account the fact that there are several DTV stations in each market and each station will require its own encoder, transmitter and related equipment. In other words, multiple transmitters and encoders will be needed at each location.<sup>15</sup> Using CTIA/CEA's own estimates of an average of 8.57 stations per market, a more accurate cost estimate for providing DTS transmitters for all stations would be \$11.7 billion to \$15.7 billion.<sup>16</sup>

Second, the proposal estimates that only 15-20 DTS transmitters would be needed for each TV station to transition from a "high power/high tower" to a "low power network" model. This estimate is incorrect, and the mistake has a large impact on the spectrum yield that CTIA/CEA claim to achieve through their proposal. A typical full-power UHF DTV station has a service area with a radius of about 90 kilometers (55 miles), thereby achieving a typical service area of about 25,430 square kilometers. In order for 15-20 SFN transmitters to replicate a service area of this size, each transmitter would need to cover approximately 1,560 square kilometers (with a service radius of about 25 kilometers). A substantial transmit power is

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<sup>15</sup> In practice, each TV station would have to install transmitters at 15 to 20 sites. There is no equipment available that would permit multiplexing all TV channels in a market at each SFN site. Further, it is highly unlikely that such transmitters and antennas could be constructed technically or at price points that could compete with separate facilities (or would be below the \$435,000 average cost estimate used by CEA/CTIA).

<sup>16</sup> These amounts are derived by multiplying the original CTIA/CEA costs estimates of \$1.37 to \$1.83 billion by the average number of stations per market (8.57).

necessary to provide this coverage,<sup>17</sup> which would not be consistent with a low-power model. Thus, the separation distances necessary to re-use the channel (several times the service distances) would substantially reduce the amount of spectrum that CTIA/CEA speculate could be reallocated under their proposal. On the other hand, if the service radius were reduced to five kilometers to mitigate this problem, the number of required transmitters would increase to 325 or more per station, thereby exponentially increasing the costs and complexities of the approach.

Finally, beyond these calculation errors, the CTIA/CEA submission fails to take into account a number of other factors. These omissions lead to a substantial underestimation of DTS implementation costs. For example, the proposal fails to include the costs of obtaining transmitter sites (up to 325) for each station, including land purchases or ongoing rental expenses, and the costs of connecting those sites by fiber or microwave to a central control point.<sup>18</sup> While CTIA/CEA state that each station must be carefully engineered and synchronized in order to reduce service losses, they do not include the initial capital investment for fiber or microwave connections in their cost calculations. Moreover, additional day-to-day operational expenses would be incurred in the deployment of multiple DTS transmitters in a service area, including the maintenance of fiber or microwave links to a central control point.

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<sup>17</sup> For example, a MediaFlo transmitter that covers a similar service area requires an Effective Radiated Power ("ERP") of 50 kW. Thus, with respect to economic and spectral efficiency for a point to multipoint service, Media Flo did not employ the low power cellular structure envisioned by the CTIA/CEA proposal. Rather, it relied on a higher power approach, thereby requiring greater separation distances.

<sup>18</sup> The costs of dealing with tower siting, zoning, and environmental challenges must also be included. See pp. 10-11, below.



**C. The Proposal Would Not Make Available 100 To 180 MHz Of Contiguous Spectrum.**

CTIA/CEA assert that the use of low power transmitters would yield 100 to 180 MHz of contiguous spectrum. Their comments do not support this claim, however. Indeed, even if the co- and adjacent-channel DTV spacing requirements could be substantially reduced, a review of the markets in the eastern United States shows that a yield of 100-180 MHz is not possible.

For example, as noted by CEA/CTIA, the current full-power UHF DTV co-channel separation requirements are approximately 196 to 224 kilometers. They also note that adjacent channel operations must be co-located or sited 110 kilometers apart. CTIA/CEA state that the “[c]urrent FCC separation requirements effectively preclude Baltimore from using the same or adjacent channel TV channel as Washington.”<sup>19</sup> However, this fact would not change for the proposed 10-15 site SFN architecture. As stated above, employing this limited number of SFN sites will require the power level at each site to be relatively high. Required separation distances are dependent on relative signal levels, and separation distances would continue to be more than two times the service area radius. If one assumes a service radius of 25 kilometers, a co-channel separation distance of more than 60 kilometers would still be required. Adjacent channel operation still would not be permitted within that station’s service area. Given the distance separation and the overlap in service areas, stations in Baltimore and Washington are effectively precluded from using the same or adjacent channels, whether the service areas are 90 kilometers from a single high power station or 25 kilometers from multiple low power sites. As a result, in the New York-Philadelphia, Boston-Providence, Baltimore-Annapolis-Washington

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<sup>19</sup> See CEA/CTIA Comments at 8.

markets, and in other congested metropolitan markets throughout the country, different channels would be required for almost all stations, even if separation distances were drastically reduced. Thus, even for low power transmitters, different channels would have to be used in order to avoid interference. The Commission consequently would be unable to reclaim the amounts of contiguous spectrum claimed by CTIA/CEA.

**D. The Proposal Would Encounter Additional Environmental and Wildlife Protection Issues.**

Beyond those who would oppose DTS tower siting for aesthetic and general environmental concerns in local zoning disputes, DTS tower siting would likely encounter opposition based on concerns about migratory birds and endangered species. The 2008 remand in *American Bird Conservancy, Inc. v. FCC* directed the Commission to determine “how it will provide notice of pending tower applications that will ensure meaningful public involvement in implementing [National Environmental Policy Act] procedures.”<sup>20</sup> The Commission currently is considering how to handle tower applications on both an interim and permanent basis in light of the *Remand Order*.<sup>21</sup> The outcome ultimately may require some or all tower applicants to undergo a public notice process or Environmental Assessments or both. These tower siting and zoning issues clearly will increase costs, cause delays, and make some tower facility relocations impossible. For example, the U.S. Fish and Wildlife Service (USFWS) recently opposed the siting of a short, unlit tower (180 feet high) alongside a highway in Duluth City, MN, citing concerns for migratory birds, and threatened enforcement action under the Migratory Bird Treaty

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<sup>20</sup> 516 F.3d 1027, 1035 (D.C. Cir. 2008) (“*Remand Order*”).

<sup>21</sup> See In the Matter of Amendment of Parts 1 and 17 of the Commission’s Rules Regarding Procedures for Processing Antenna Structure Registration Applications, *WT Docket No. 08-61*.

Act.<sup>22</sup> A requirement that all 1,700 broadcast television stations abandon their current single tower transmission systems and each deploy perhaps hundreds of towers per station in their place is not tenable.

In summary, CTIA/CEA's proposal would require a complete restructuring of the technical architecture of the country's broadcast service – a restructuring that is infeasible, would cause service losses, entail unacceptably high costs and fail to achieve its desired spectrum yields.

## **II. THE COMMENTS OF DOJ AND NTIA FOCUSING ON WIRELESS COMPETITION UNDERSCORE THE NEED TO SCRUTINIZE THE BROADER INDUSTRY PICTURE WHEN CONSIDERING THE BROADBAND PLAN**

MSTV and NAB agree with several aspects of the submissions from DOJ and NTIA. DOJ predicts increased consumer demand for mobility, technical speed, and HD video.<sup>23</sup> Mobile DTV offers consumers real-time, high-quality video on-the-go; thus, broadcasters are poised to meet important future consumer demands. DOJ's comments also urge "greater use of secondary markets in spectrum."<sup>24</sup> MSTV and NAB endorse this suggestion as the kind of limited and localized opportunity to develop broadband solutions, for which the broadcast community has voiced support.<sup>25</sup> DOJ endorses the need, where spectrum reallocation is being considered, to take into account "transition" costs.<sup>26</sup> MSTV and NAB agree.<sup>27</sup> As MSTV and NAB have pointed out, in exercising this responsibility, the Commission should take into

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<sup>22</sup> See <http://www.duluthnewtribune.com/event/article/id/155859/>.

<sup>23</sup> See DOJ submission at 6 and 8.

<sup>24</sup> See *id.* at 32.

<sup>25</sup> See "Broadcasting And The Broadband Future: A Proposed Framework For Discussion," GN Docket Nos. 09-47, 09-137, and 09-51 (Dec. 22) ("Framework Document"), at 38.

<sup>26</sup> See DOJ submission at 23.

<sup>27</sup> This point is developed in the Framework Document at 21-22.



account the value of “public goods” in evaluating incumbent spectrum uses versus new spectrum uses. Neither DOJ nor NTIA address this point. This factor is particularly important and relevant in the case of proposals to take spectrum away from the public’s broadcast service.<sup>28</sup>

NTIA’s submission urges “exploring both commercial and government spectrum available for reallocation and favors a spectrum inventory.”<sup>29</sup> MSTV and NAB agree that a comprehensive inventory of present and future spectrum availability and usage is necessary,<sup>30</sup> and they support the spectrum inventory bill recently passed by the House Subcommittee on Communications, Technology, and the Internet.<sup>31</sup> NTIA also recommends “research and development that leads to innovative new spectrum access technologies, because these can spur a new round of innovation that will increase domestic spectrum efficiency through sharing and opportunistic use.”<sup>32</sup> As noted in MSTV/NAB’s Framework Document, “[n]ew technologies are being developed now and will be developed in the future that will unquestionably enhance the wireless carriers’ efficient use of existing wireless (and wireline) capacity.”<sup>33</sup> We agree with NTIA that exploration of these new technologies is essential.

To the extent that some may suggest that the DOJ and NTIA submissions may be read to endorse taking spectrum away from the public’s broadcast service, MSTV and NAB point out that no such reading is valid. These submissions in fact focus on providing more

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<sup>28</sup> See DOJ submission at 22-23; see Framework Document at 11-17.

<sup>29</sup> See NTIA submission at 5.

<sup>30</sup> See Statement of Senator Gordon H. Smith, President and CEO of NAB, Hearing on H.R. 3125, the “Radio Spectrum Inventory Act,” and H.R. 3019, the “Spectrum Relocation Improvement Act of 2009,” U.S. House of Representatives, Subcommittee on Communications, Technology and the Internet (Dec. 15, 2009); see also MSTV/NAB Framework Document at 38.

<sup>31</sup> Radio Spectrum Inventory Act, H.R. 3125.

<sup>32</sup> See NTIA submission at 5.

<sup>33</sup> See Framework Document at 36.

spectrum to wireless services in order to promote competition within the wireless market and between wireless and wireline providers.<sup>34</sup> The DOJ comments do not discuss either the effective and efficient competition that mobile DTV will provide to the wireless video services, or the competitive role that the public's free-over-the air broadcast service will play as a marketplace alternative to pay-video services provided by cable, telephone, and satellite systems.<sup>35</sup> In addressing ways to promote competition, efficient spectrum use and the public interest across the entire communications ecosystem, the Commission will need to focus on these and other digital television issues.

Indeed, it should be recognized that increasing the amount of spectrum available for wireless (1) will not necessarily solve the competitive problems about which DOJ is concerned and (2) may curtail efforts to develop other innovative ways to meet properly-assessed wireless spectrum needs, including investment in technologies that would more efficiently use current wireless spectrum.

Particularly problematic is the assumption that a lack of spectrum is the key impediment to increased competition in broadband generally.<sup>36</sup> This assumption is based on a static view of broadband competition and technologies. As noted previously in this proceeding, there is no necessary nexus between allocating additional spectrum and increased broadband

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<sup>34</sup>See DOJ submission at 22; NTIA comments at 5. DOJ's perspective that wireless lags behind wireline does not comport with marketplace realities. Wireline disconnections increase, while wireless subscriptions and usage surge. Accordingly, the largest communications companies are divesting their wireline voice services.

<sup>35</sup> See Framework Document at 23 ("Local broadcast television is a vital alternative to expensive subscription services.").

<sup>36</sup> See DOJ submission at 21-22. As described in the Framework Document submitted by MSTV and NAB in response to NBP Notice #26, the claim that more spectrum is needed for point-to-point wireless service is speculative at best. See Framework Document at 34 and its Attachment A.

deployment and use.<sup>37</sup> Many countries with higher broadband usage rates than the United States have less spectrum allocated for broadband purposes. Accordingly, reallocating spectrum for broadband will not necessarily increase broadband penetration or competition. New wireless competitors need to succeed on the basis of lower costs and/or better service, both of which, through new technologies, can be achieved, wholly or to a very large extent, within the amount of spectrum currently allocated to wireless services.

The Commission must also consider the extent to which some of these policy recommendations are premature because they fail to take into account the large number of wireless broadband providers, many of whom use different spectrum bands and different technical solutions. New competitors (including those with various service offerings such as mobile DTV services) continue to emerge. In this environment, meeting all of the claimed spectrum demands of one class of service provider is neither practical nor desirable. Nor should the Commission essentially declare a winner by directing spectrum to particular providers (wireless) and taking it away from more efficient, competitive providers (broadcasting).<sup>38</sup>

### III. CONCLUSION

This proceeding calls for the Commission to undertake the following analytical steps:

- assess the real need for additional wireless spectrum;

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<sup>37</sup> See Framework Document at 6 and its Attachment A at Section III(D).

<sup>38</sup> The DOJ and NTIA comments acknowledge the difficulty of efficiently allocating spectrum in markets with powerful incumbents that have both high use value for additional spectrum but uncertain motivations for fully developing wireless broadband as a competitor to wireline services. See, e.g., NTIA Comments at 5 (“In the presence of market power, however, the bidders with the highest private value may be incumbents intent on forestalling new entry that will compete for the incumbents’ existing customer base.”).



- consider sources for this additional spectrum other than broadcasting;
- assess the economic and non-economic costs to the public of taking spectrum away from the public's broadcasting services; and
- consider less disruptive ways of using broadcast spectrum for wireless broadband services, aside from reallocation.

These steps should be based on the fundamental fact that broadcasting and wireless broadband are complementary services, each with a necessary role to play in a healthy, innovative, universally-available communications ecosystem. This is more than a statement of principle. It is a statement of technological reality. Point-to-multipoint broadcasting is simply a more efficient way to deliver mass-audience video content to the public than wireless point-to-point technology, and it is more immediately deployable. Wise spectrum policy will recognize that reality and conserve wireless spectrum capacity for other uses where point-to-point technologies are more suitable.

MSTV/NAB's Framework Document elaborated on the analytic steps identified above. The Framework Document emphasized that the wireless industry's analysis of the costs of expropriating the spectrum allocated to the public's broadcast service failed to consider broadcasting's "social benefits," not measurable using conventional economic methodologies. It also emphasized that all Americans, including those consumers who subscribe to pay-cable, satellite or phone systems, benefit from and rely on local broadcast television for local journalism, local emergency information and alerts, over-the-air service on additional TV sets, and other services. No showing has been made that, if the Commission took spectrum away from broadcasting, these services would be effectively replaced.

The CTIA/CEA comments represent an important advance in the debate because they accept the value of broadcasting and the need to preserve stations' 19.4 Mbps capacity, so that the public can receive the benefits of broadcasters' innovative use of this capacity.

However, the CTIA/CEA comments drastically *under*-count the financial and loss-of-service costs of their proposed use of DTS technology to repack broadcast spectrum while *over*-estimating the spectrum yield of their proposal. DTS is an appropriate fill-in technology. It is not a feasible replacement for the country's existing digital infrastructure.

The DOJ and NTIA pleadings do not specifically address broadcast issues. Their submissions, however, underscore the point that the first step is to scrutinize the wireless industry's real spectrum needs and conduct an inventory of present and future spectrum availability. Their comments also are helpful in pointing out the importance of assessing the social costs of taking spectrum away from other services. A focus on the communications landscape as a whole will show the Commission that broadcasting and wireless broadband are valuable, complementary services to be integrated and coordinated, not traded off against each other.

Within the framework of that perspective, the Commission can craft a practical, effective, spectrally-efficient broadband plan, with full and constructive participation by the broadcasting community.

Respectfully submitted,

/s/

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January 27, 2010